The use of smaller typescript would have helped to make this book more readable, as would the underlining of those statements meant to stand out, e.g. the enunciation of a proposition, etc. This of course will not be a serious drawback to those for whom the book was primilarly intended—those doing a graduate course in modular forms. However, the book would have had more universal appeal had it been published in the more conventional manner, although, admittedly there would have been a delay of a few months in the publishing date, a delay which would not have affected the sale of the book in the slightest. E. SPENCE

EISEN, MARTIN, *Elementary Combinatorial Analysis* (Gordon and Breach, 1969), x+233 pp., 145s.

The author gives a very leisurely account of the basic techniques available in combinatorial problems, covering generating functions, recursion and the inclusion-exclusion principle. Progress is very much via examples, and most of the " classical " problems such as the " problème des ménages " are covered. In the more advanced final chapter, the Möbius function on a partially ordered set is introduced, and used in one of two proofs of Burnside's result on orbits. This leads into Polya's theory of counting, and the book ends with a readable account of Polya's theorem.

Prerequisites for the book are nil; even the summation sign is explained at length. Comparison with Riordan's standard "*Introduction to Combinatorial Analysis*" is inevitable. Eisen covers much less but is more readable and, despite occasional pedantry, gives a straightforward introduction to combinatorial ideas which would be useful background reading for any mathematician who realises that he ought to be able to think combinatorially. Perhaps the fatal combination, however, is that of combining an assumption of mathematical ignorance on the part of the reader at the start with a specialised finale, at an excessive price. But if the book succeeds in making Polya's theory less of a specialist's topic, then it will have done a useful job.

I. ANDERSON

MILNOR, JOHN, *Singular Points of Complex Hypersurfaces* (Annals of Mathematics Studies, no. 61, Princeton University Press. London: Oxford University Press, 1969) 30s.

Let f: $\mathbf{C}^{n+1} \to \mathbf{C}$ be a non-constant polynomial and let $V = f^{-1}(0)$. Let $Z_0 \in V$, let S_ε be a small sphere of centre z_0 and radius ε and let $K = V \cap S_\varepsilon$. In this beautiful monograph Milnor studies the topology of S_ε/K and K in the case where z_0 is an isolated singularity of V. The principal theorems are

I. The map

$$S_\varepsilon \setminus K \to S^1; \; z \mapsto f(z)/|f(z)|$$

is the projection map of a smooth fibre bundle, the closure of each fibre being a smooth manifold of real dimension $2n$, with the homotopy type of a finite *CW*-complex of dimension n, and with boundary K.

II. The space K is a smooth $(n-2)$-connected $(2n-1)$-manifold.

Criteria are given for determining when K is homeomorphic to a sphere and for determining its differentiable structure in such a case. There is much interplay here with related work on exotic spheres by Brieskorn, Hirzebruch and Pham.

The first chapter provides an admirable introduction to the work of Whitney on algebraic sets. The proofs of theorems I and II depend on the " curve selection lemma " proved in Chapter 2 and on standard Morse Theory.

IAN R. PORTEOUS